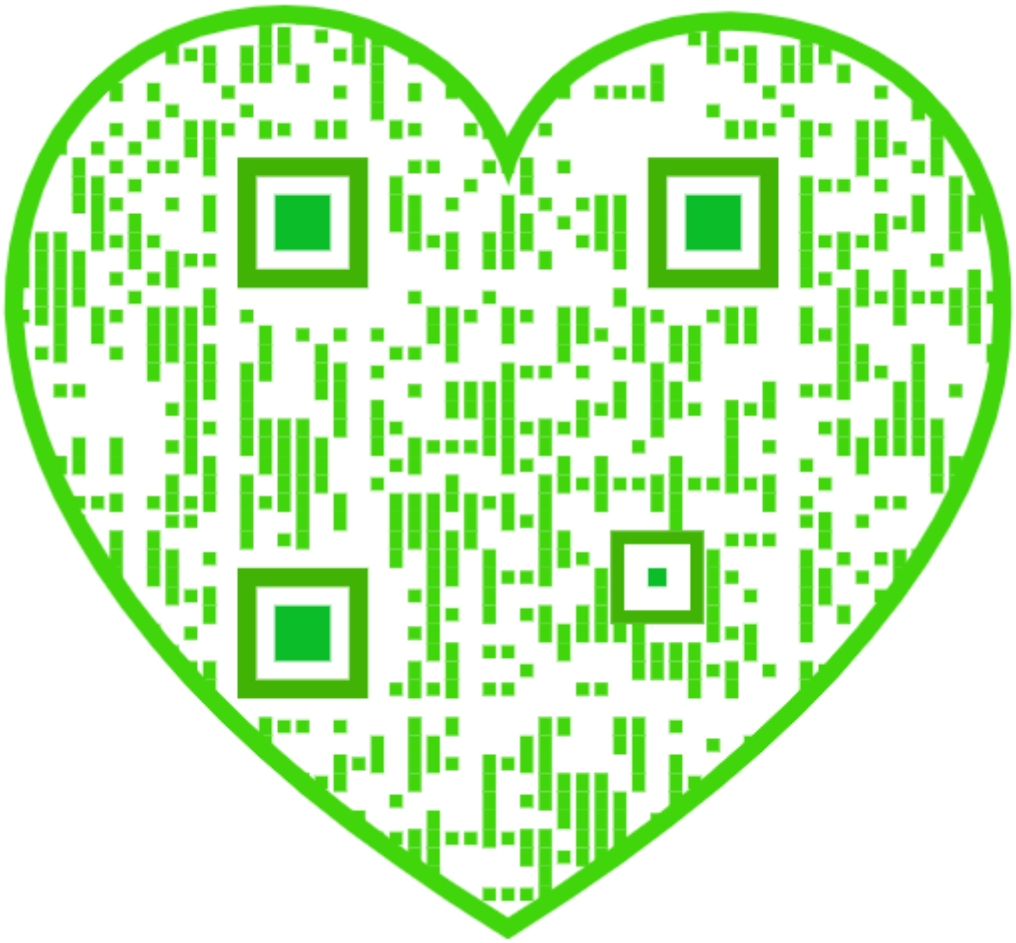
Master in Artificial Intelligence

Algorithm Selection & Development XXII



Purpose

The purpose of the section is to help you learn how to research, select, and develop appropriate algorithmsto become a Successful Artificial Intelligence (AI) Engineer

At the end of this lecture, you will learn the following

- **Deploy the trained model in a production environment and integrate it into the application workflow.**
- **Implement monitoring and logging mechanisms to track model performance, drift, and errors over time.**
- **Continuously evaluate and update the model as new data becomes available or the problem requirements change**

How to research, select, and develop appropriate algorithms

Deployment and Monitoring:

- Deploy the trained model in a production environment and integrate it into the application workflow
- Implement monitoring and logging mechanisms to track model performance, drift, and errors over time
- Continuously evaluate and update the model as new data becomes available or the problem requirements change

How to deploy the trained model in a production environment and integrate it into the application workflow

Deployment and Monitoring

- **Deploy the trained model in a production environment and integrate it into the application workflow**
- Implement monitoring and logging mechanisms to track model performance, drift, and errors over time
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How to deploy the trained model in a production environment and integrate it into the application workflow

- Prepare the Trained Model
- Choose a Deployment Environment
- Set up the Deployment Infrastructure
- Deploy the Model
- Create an Inference Service
- Ensure Scalability and Availability

How to deploy the trained model in a production environment and integrate it into the application workflow

Integrate with Application Workflow

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Implement Monitoring and Logging

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Implement Security Measures

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Test and Validate

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Monitor and Maintain

How to Implement monitoring and logging mechanisms to track model performance, drift, and errors over time

Deployment and Monitoring:

- Deploy the trained model in a production environment and integrate it into the application workflow
- **Implement monitoring and logging mechanisms to track model performance, drift, and errors over time**
- Continuously evaluate and update the model as new data becomes available or the problem requirements change

How to Implement monitoring and logging mechanisms to track model performance, drift, and errors over time

- Define Key Metrics
- Set up Logging Infrastructure
- Instrument Model Code
- Log Model Predictions
- Monitor Performance Metrics
- Detect Concept Drift

How to Implement monitoring and logging mechanisms to track model performance, drift, and errors over time

- Track Model Versioning
- Capture Errors and Exceptions
- Implement Data Drift Monitoring
- Visualize and Analyze Logs
- Regularly Review and Audit Logs

How to continuously evaluate and update the model as new data becomes available or the problem requirements change

Deployment and Monitoring:

- Deploy the trained model in a production environment and integrate it into the application workflow
- Implement monitoring and logging mechanisms to track model performance, drift, and errors over time
- **Continuously evaluate and update the model as new data becomes available or the problem requirements change**

How to continuously evaluate and update the model as new data becomes available or the problem requirements change

Define Monitoring Schedule

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Set up Data Collection Pipeline

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Update Data Drift Detection

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Implement Model Evaluation Metrics

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Scheduled Model Retraining

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Automate Retraining Pipeline

How to continuously evaluate and update the model as new data becomes available or the problem requirements change

Incremental Learning

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Version Control and Rollback

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Validate and Test Updates

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Monitor Model Performance Post-Update

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Feedback Loop and Iteration

How to research, select, and develop appropriate algorithms

Problem Understanding and Formulation

Data Understanding and Preparation

Researching Algorithms and Architectures

Model Selection and Evaluation

Iterative Development and Optimization

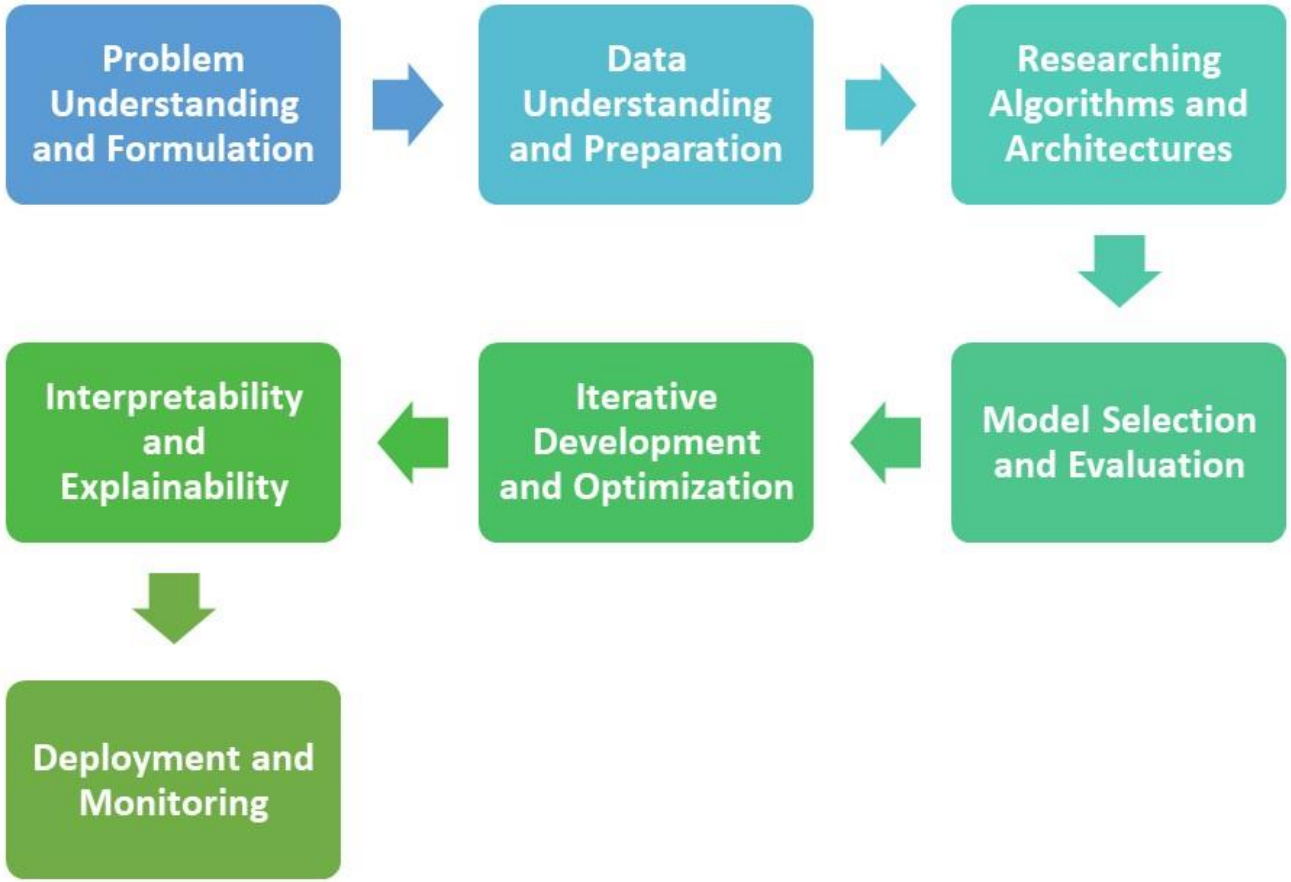
Interpretability and Explainability

Deployment and Monitoring

What is next?

How to research, select, and develop appropriate algorithms

**Let us look at an example of researching, selecting, and developing appropriate machine learning alg
learning architectures based on the problem at hand and the available data**



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